Electronic Version
Stylesheet Version v1.1.1

Claims

[c1] 1. A method for setting a pixel clock of a display driving circuit, the display driving circuit being used to drive a display device, the method comprising:
(a) deriving a predetermined pixel clock from a display mode setting set by the display device;
(b) generating a reference clock, and using a plurality of scaling factors for respectively adjusting a frequency value of the reference clock to generate a plurality of calculation results;
(c) using a plurality of first coefficients R for respectively right-shifting R bits of the calculation results to generate a plurality of quotients;
(d) comparing a plurality of differences between the quotients and the predetermined pixel clock for obtaining an optimum quotient; and
(e) using a scaling factor and a first coefficient R corresponding to the optimum quotient for generating an actual pixel clock used to drive the display device.

[c2] 2. The method of claim 1 wherein the scaling factors used in step (b) are generated by using a plurality of second coefficients M and a plurality of third coefficients

N, the second coefficients M are used to increase the frequency value, and the third coefficients N are used to decrease the frequency value.

[c3] 3. The method of claim 2 wherein the scaling factors correspond to (M+2)/(N+2), and the second coefficients M and the third coefficients N are integers.

[c4] 4. The method of claim 2 wherein the first coefficients R, the second coefficients M, and the third coefficients N form a plurality of combinations, and the combinations are calculated within a plurality of loop operations to generate the quotients.

[c5] 5. The method of claim 4 wherein step (d) comprises:
using a first difference between a quotient and the predetermined pixel clock which is calculated in a first loop operation as a minimum difference;
if a second difference between a quotient and the predetermined pixel which is calculated in a second loop operation after the first loop operation is less than the first difference, using the second difference to update the minimum difference; and
after all of the loop operations are executed, using a quotient associated with the minimum difference as the optimum quotient.

[c6] 6. A method for setting a pixel clock of a display driving circuit, the display driving circuit being used to drive a display device, the method comprising:
(a) deriving a predetermined pixel clock from a display mode setting set by the display device;
(b) generating a reference clock, and using a plurality of first coefficients R for respectively right-shifting R bits of a frequency value of the reference clock to generate a plurality of quotients;
(c) using a plurality of scaling factors for respectively adjusting the quotients to generate a plurality of calculation results;
(d) comparing a plurality of differences between the calculation results and the predetermined pixel clock for obtaining an optimum calculation result; and
(e) using a scaling factor and a first coefficient R corresponding to the optimum calculation result for generating an actual pixel clock used to drive the display device.

[c7] 7. The method of claim 6 wherein the scaling factors used in step (c) are generated by using a plurality of second coefficients M and a plurality of third coefficients N, the second coefficients M are used to increase the frequency value, and the third coefficients N are used to decrease the frequency value.

[c8] 8. The method of claim 7 wherein the scaling factors correspond to (M+2)/(N+2), and the second coefficients M and the third coefficients N are integers.

[c9] 9. The method of claim 8 wherein the first coefficients R, the second coefficients M, and the third coefficients N form a plurality of combinations, and the combinations are calculated within a plurality of loop operations to generate the quotients.

[c10] 10. The method of claim 9 wherein step (d) comprises:
using a first difference between a quotient and the predetermined pixel clock which is calculated in a first loop operation as a minimum difference;
if a second difference between a quotient and the predetermined pixel which is calculated in a second loop operation after the first loop operation is less than the first difference, using the second difference to update the minimum difference; and
after all of the loop operations are executed to calculate the differences, using a quotient associated with the minimum difference as the optimum quotient.